

IN THE CLAIMS:

Please amend claims 1, 3 through 5, 12, 15, 16, and 21 as follows:

1. (CURRENTLY AMENDED) A method of part flow for a programmable logic controller logical verification system, said method comprising the steps of:

constructing a simulation model of ~~a part flow in~~ a manufacturing line using a computer;

playing the simulation model by a PLC logical verification system on the computer and allowing a user to visually see flow of a part through the manufacturing line;

determining if the part flow represented in the simulation model is correct;

generating PLC code if the part flow represented in the simulation model is correct; and

using the ~~part flow simulation model to generate~~ generated PLC code and implementing the manufacturing line according to the part flow simulation model.

2. (ORIGINAL) A method as set forth in claim 1 wherein said step of constructing comprises selecting a part generator.

3. (CURRENTLY AMENDED) A method as set forth in claim 2 wherein said step of constructing further comprises generating a the part with the part generator.

4. (CURRENTLY AMENDED) A method as set forth in claim 3 wherein said step of constructing further comprises ~~moving the generated part to a location~~ identifying part locations of the generated part within the manufacturing line.

5. (CURRENTLY AMENDED) A method as set forth in claim 4 wherein said step of constructing further comprises testing the generated part at the part ~~location~~ locations.

6. (ORIGINAL) A method as set forth in claim 1 wherein said step of constructing comprises constructing a record for the part.

7. (ORIGINAL) A method as set forth in claim 6 wherein the record has at least one resource.

8. (ORIGINAL) A method as set forth in claim 7 wherein the at least one resource has at least one capability.

9. (CANCELED)

10. (PREVIOUSLY PRESENTED) A method as set forth in claim 1 including the step of modifying the part flow represented in the simulation model if the part flow represented in the simulation model is not correct.

11. (CANCELED)

12. (CURRENTLY AMENDED) A method for application of a part flow for a programmable logic controller logical verification system, said method comprising the steps of:

constructing a simulation model of a part flow in a manufacturing line using a computer by representing a part and part locations of the manufacturing line;

playing the simulation model by a PLC logical verification system on the computer to move the represented part to and from the part locations within the manufacturing line and allowing a user to visually see flow of the represented part through the manufacturing line;

determining if the part flow represented in the simulation model is correct;

generating PLC code if the part flow simulation model is correct; and

using the generated PLC code and implementing the manufacturing line according to the part flow simulation model.

13. (ORIGINAL) A method as set forth in claim 12 wherein said step of constructing comprises selecting a part generator.

14. (ORIGINAL) A method as set forth in claim 13 wherein said step of constructing further comprises generating a part with the part generator.

15. (CURRENTLY AMENDED) A method as set forth in claim 14 wherein said step of constructing further comprises ~~moving the generated part to a location~~ identifying part locations of the generated part in the manufacturing line.

16. (CURRENTLY AMENDED) A method as set forth in claim 15 wherein said step of constructing further comprises testing the generated part at the ~~part location~~ locations.

17. (ORIGINAL) A method as set forth in claim 12 wherein said step of constructing comprises constructing a record for the part.

18. (ORIGINAL) A method as set forth in claim 17 wherein the record has at least one resource.

19. (ORIGINAL) A method as set forth in claim 18 wherein the at least one resource has at least one capability.

20. (PREVIOUSLY PRESENTED) A method as set forth in claim 1 including the step of modifying the part flow represented in the simulation model if the part flow represented in the simulation model is not correct.

21. (CURRENTLY AMENDED) A method for application of a part flow for a programmable logic controller logical verification system, said method comprising the steps of:
 constructing a simulation model of a part flow in a manufacturing line using a computer by selecting a part generator, generating a part with the part generator, and identifying part locations of the part in the manufacturing line ~~and moving the generated part to a location;~~
 playing the simulation model of the part flow by a PLC logical verification system on the computer to move the generated part to and from locations within the manufacturing line

and allowing a user to visually see flow of the part through the manufacturing line by a change of color at any of the part locations;

determining if the part flow represented in the simulation model is correct;

modifying the part flow represented in the simulation model if the part flow represented in the simulation model is not correct;

generating PLC code if the part flow simulation model is correct; and

using the generated PLC code and implementing the manufacturing line according to the part flow simulation model.